

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (currently amended): A multiplex laser light source comprising:  
  
a plurality of semiconductor lasers;  
  
a single multi-mode optical fiber; and  
  
a light-collecting optics system for collecting laser beams emitted from said plurality of semiconductor lasers and then coupling the collected laser beams to said multi-mode optical fiber, said light-collecting optics system comprising a plurality of collimator lenses, each having a first aperture diameter in said first direction and a second aperture diameter larger than said first aperture diameter in a second direction perpendicular to said first direction, and provided so that they correspond to each of said plurality of said semiconductor lasers.

2. (currently amended): The multiplex laser light source as set forth in claim 1, wherein said plurality of semiconductor lasers are disposed so that their light-emitting points are arranged in a row in a first direction parallel to their active layers; and  
  
said light-collecting optics system comprises  
  
~~a plurality of collimator lenses, each having a first aperture diameter in said first direction and a second aperture diameter larger than said first aperture diameter in a second direction~~

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 09/985,855

~~perpendicular to said first direction, and provided so that they correspond to each of said plurality of said semiconductor lasers, and~~

a collective lens for collecting said plurality of laser beams collimated by said plurality of collimator lenses and then converging the collimated laser beams on an end face of said multi-mode optical fiber.

3. (original): The multiplex laser light source as set forth in claim 2, wherein said plurality of collimator lenses are formed integrally with one another and are constructed as a lens array.

4. (original): The multiplex laser light source as set forth in claim 1, wherein a block on which said plurality of semiconductor lasers are mounted is divided into a plurality of subblocks, and said subblocks are bonded together with one another.

5. (original): The multiplex laser light source as set forth in claim 2, wherein a block on which said plurality of semiconductor lasers are mounted is divided into a plurality of subblocks, and said subblocks are bonded together with one another.

6. (original): The multiplex laser light source as set forth in claim 3, wherein a block on which said plurality of semiconductor lasers are mounted is divided into a plurality of subblocks, and said subblocks are bonded together with one another.

7. (original): The multiplex laser light source as set forth in claim 1, wherein said semiconductor lasers are GaN semiconductor lasers.

8. (original): The multiplex laser light source as set forth in claim 2, wherein said semiconductor lasers are GaN semiconductor lasers.

9. (original): The multiplex laser light source as set forth in claim 3, wherein said semiconductor lasers are GaN semiconductor lasers.

10. (original): The multiplex laser light source as set forth in claim 4, wherein said semiconductor lasers are GaN semiconductor lasers.

11. (original): The multiplex laser light source as set forth in claim 1, wherein said multi-mode optical fiber has a core diameter of 50  $\mu\text{m}$  or less and a numerical aperture of 0.3 or less.

12. (original): The multiplex laser light source as set forth in claim 2, wherein said multi-mode optical fiber has a core diameter of 50  $\mu\text{m}$  or less and a numerical aperture of 0.3 or less.

13. (original): The multiplex laser light source as set forth in claim 3, wherein said multi-mode optical fiber has a core diameter of 50  $\mu\text{m}$  or less and a numerical aperture of 0.3 or less.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 09/985,855

14. (original): The multiplex laser light source as set forth in claim 4, wherein said multi-mode optical fiber has a core diameter of 50  $\mu\text{m}$  or less and a numerical aperture of 0.3 or less.

15. (original): The multiplex laser light source as set forth in claim 7, wherein said multi-mode optical fiber has a core diameter of 50  $\mu\text{m}$  or less and a numerical aperture of 0.3 or less.

16. (original): The multiplex laser light source as set forth in claim 1, wherein a value of (core diameter  $\times$  numerical aperture) of said multi-mode optical fiber is 7.5  $\mu\text{m}$  or less.

17. (original): The multiplex laser light source as set forth in claim 2, wherein a value of (core diameter  $\times$  numerical aperture) of said multi-mode optical fiber is 7.5  $\mu\text{m}$  or less.

18. (original): The multiplex laser light source as set forth in claim 3, wherein a value of (core diameter  $\times$  numerical aperture) of said multi-mode optical fiber is 7.5  $\mu\text{m}$  or less.

19. (original): The multiplex laser light source as set forth in claim 4, wherein a value of (core diameter  $\times$  numerical aperture) of said multi-mode optical fiber is 7.5  $\mu\text{m}$  or less.

20. (original): The multiplex laser light source as set forth in claim 7, wherein a value of (core diameter  $\times$  numerical aperture) of said multi-mode optical fiber is 7.5  $\mu\text{m}$  or less.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 09/985,855

21. (original): The multiplex laser light source as set forth in claim 11, wherein a value of (core diameter  $\times$  numerical aperture) of said multi-mode optical fiber is 7.5  $\mu\text{m}$  or less.

22. (original): The multiplex laser light source as set forth in claim 1, wherein said plurality of semiconductor lasers comprise 3 to 10 semiconductor lasers arranged in a row.

23. (original): The multiplex laser light source as set forth in claim 2, wherein said plurality of semiconductor lasers comprise 3 to 10 semiconductor lasers arranged in a row.

24. (original): The multiplex laser light source as set forth in claim 3, wherein said plurality of semiconductor lasers comprise 3 to 10 semiconductor lasers arranged in a row.

25. (original): The multiplex laser light source as set forth in claim 4, wherein said plurality of semiconductor lasers comprise 3 to 10 semiconductor lasers arranged in a row.

26. (original): The multiplex laser light source as set forth in claim 7, wherein said plurality of semiconductor lasers comprise 3 to 10 semiconductor lasers arranged in a row.

27. (original): The multiplex laser light source as set forth in claim 11, wherein said plurality of semiconductor lasers comprise 3 to 10 semiconductor lasers arranged in a row.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 09/985,855

28. (original): The multiplex laser light source as set forth in claim 16, wherein said plurality of semiconductor lasers comprise 3 to 10 semiconductor lasers arranged in a row.

29. (original): The multiplex laser light source as set forth in claim 22, wherein said plurality of semiconductor lasers comprise 6 or 7 semiconductor lasers arranged in a row.

30. (original): The multiplex laser light source as set forth in claim 1, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

31. (original): The multiplex laser light source as set forth in claim 2, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

32. (original): The multiplex laser light source as set forth in claim 3, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

33. (original): The multiplex laser light source as set forth in claim 4, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

34. (original): The multiplex laser light source as set forth in claim 7, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appl. No. 09/985,855

35. (original): The multiplex laser light source as set forth in claim 11, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

36. (original): The multiplex laser light source as set forth in claim 16, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

37. (original): The multiplex laser light source as set forth in claim 22, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

38. (original): The multiplex laser light source as set forth in claim 29, wherein said plurality of semiconductor lasers each have a light-emitting width of 1.5 to 5  $\mu\text{m}$ .

39. (original): The multiplex laser light source as set forth in claim 30, wherein said plurality of semiconductor lasers each have a light-emitting width of 2 to 3  $\mu\text{m}$ .

40. (original): The multiplex laser light source as set forth in claim 1, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 09/985,855

41. (original): The multiplex laser light source as set forth in claim 2, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

42. (original): The multiplex laser light source as set forth in claim 3, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

43. (original): The multiplex laser light source as set forth in claim 4, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

44. (original): The multiplex laser light source as set forth in claim 7, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

45. (original): The multiplex laser light source as set forth in claim 11, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.



AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 09/985,855

46. (original): The multiplex laser light source as set forth in claim 16, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

47. (original): The multiplex laser light source as set forth in claim 22, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

48. (original): The multiplex laser light source as set forth in claim 29, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

49. (original): The multiplex laser light source as set forth in claim 30, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

50. (original): The multiplex laser light source as set forth in claim 39, wherein said plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where said laser beams are received.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 09/985,855

51. (original): The multiplex laser light source as set forth in any one of claims 1 to 50, wherein said multi-mode optical fiber comprises a plurality of multi-mode optical fibers in which at least exit end portions thereof are disposed in one-dimensional array form, and each of said plurality of multi-mode optical fibers is combined with said plurality of semiconductor lasers and said light-collecting optics system.

52. (original): The multiplex laser light source as set forth in any one of claims 1 to 50, wherein said multi-mode optical fiber comprises a plurality of multi-mode optical fibers in which at least exit end portions thereof are disposed in bundle form, and each of said plurality of multi-mode optical fibers are combined with said plurality of semiconductor lasers and said light-collecting optics system.

53. (original): An exposure apparatus with a light source, wherein said light source comprises the multiplexer laser light source as set forth in claim 51.

54. (original): An exposure apparatus with a light source, wherein said light source comprises the multiplexer laser light source as set forth in claim 52.